

CLAIMS

What is claimed is:

1. A storage medium comprising:
 - a. a substrate,
 - b. a magnetic layer, and
 - c. a means of selectively introducing a plurality of nucleation sites into said magnetic layer,whereby said nucleation sites represent the information to be stored.
2. The storage medium of claim 1 wherein said nucleation sites are introduced into said magnetic layer by creating features on said substrate.
3. The storage medium of claim 1 wherein said nucleation sites are introduced into said magnetic layer by creating steps on said substrate.
4. The storage medium of claim 1 wherein said substrate has a surface with a texture, and said texture is selectively altered to introduce said nucleation sites into said magnetic layer.
5. The storage medium of claim 1 wherein said magnetic layer is a magneto-optical thin film.
6. A method of storing information in a magneto-optical medium comprising:
creating nucleation sites in said medium to store the information.
7. The method of claim 6 wherein said nucleation sites are introduced into said magnetic layer by creating features on said substrate.
8. The method of claim 6 wherein said nucleation sites are introduced into said magnetic layer by creating steps on said substrate.
9. The method of claim 6 wherein said substrate has a surface with a texture, and said textured is selectively altered to introduce said nucleation sites into said magnetic layer.
10. A method of storing information in and reading information from a magnetic layer comprising:
 - a. creating a plurality of nucleation sites at predetermined locations in said magnetic layer, and

- b. heating said storage layer at a selected location to detect said nucleation sites in said magnetic layer,
whereby said nucleation sites represent the information to be stored and
whereby heating said storage layer causes a magnetic domain to nucleation when a nucleation site is present under said selected location.
- 11. The method of claim 10 wherein said nucleation sites are introduced into said magnetic layer by creating features on said substrate.
- 12. The method of claim 10 wherein said nucleation sites are introduced into said magnetic layer by creating steps on said substrate.
- 13. The method of claim 10 wherein said substrate has a surface with a texture, and said textured is selectively altered to introduce said nucleation sites into said magnetic layer.
- 14. A method of fabricating a domain expansion medium comprising: depositing a single magnetic layer in which said magnetic layer's properties are used to both store and read back information.
- 15. The method of claim 14 wherein said magnetic properties store information by containing localized nucleation sites.
- 16. The method of claim 14 wherein said nucleation sites are introduced into said magnetic layer by creating features on said substrate.
- 17. The method of claim 14 wherein said nucleation sites are introduced into said magnetic layer by creating steps on said substrate.
- 18. The method of claim 14 wherein said substrate has a surface with a texture, and said textured is selectively altered to introduce said nucleation sites into said magnetic layer.